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Attorney Reference Number 245-68071-01

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#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Paul et al.

Application No. 10/803,502 Filed: March 17, 2004

Confirmation No. 5691

For: METHOD FOR MAKING DEVICES

HAVING INTERMETALLIC STRUCTURES AND INTERMETALLIC

DEVICES MADE THEREBY

Examiner: Unknown

Art Unit: 3729

Attorney Reference No. 245-68071-01

COMMISSIONER FOR PATENTS

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Attorney or Agen

Date Mailed October 5,0005

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Enclosed for filing in the application referenced above are the following:

- ✓ Information Disclosure Statement
   ✓ Form 1449 and references cited thereon
- The Director is hereby authorized to charge any additional fees that may be required, or credit over-payment, to Deposit Account No. 02-4550. A copy of this sheet is enclosed.
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Respectfully submitted,

KLARQUIST SPARKMAN, LLP

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Telephone: (503) 226-7391 Facsimile: (503) 228-9446

cc: Docketing

Stagey C. Slater
Registration No. 36,011

miscellaneous transmittal letter TRANSMITTAL -Page Lof I ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /N.D./

PATENT

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Attorney or Agent for Applicant(s)

Date Mailed October 5, 2005

### INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. § 1.97(b)(3)

COMMISSIONER FOR PATENTS P.O. BOX 1450 ALEXANDRIA, VA 22313-1450

Listed on the accompanying form PTO-1449 and enclosed herewith are several Englishlanguage documents. Applicants respectfully request that these documents be listed as references cited on the issued patent.

Copies of United States patents and United States published patent applications do not have to be provided to the Patent Office (37 C.F.R. 1.98(a)(2)(ii)). Copies of unpublished U.S. applications do not have to be provided, as long as the application is available on PAIR, as this requirement of 37 C.F.R. § 1.98(a)(2)(iii) has been waived by the United States Patent and Trademark Office pursuant to the Official Gazette Notice on October 19, 2004 (1287 OG 163). Applicants will provide copies of such patents or applications upon request.

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PATENT

Applicants filed this Information Disclosure Statement ("IDS") before the mailing date of a first Office action on the merits. As a result, no fee should be required to file this IDS. However, if the Patent Office determines that a fee is required for Applicants to file this IDS, please charge any such fees, or credit overpayment, to Deposit Account No. 02-4550. A duplicate copy of this Information Disclosure Statement is enclosed.

The filing of this IDS shall not be construed to be an admission that the information cited in the statement is, or is considered to be, prior art or otherwise material to patentability as defined in 37 C.F.R. §1.56.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

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Examiner's Initials*	Cite No. (optional)	OTHER DOCUMENTS
/N.D./		Alm, "Diffusion Bonding - Methods and Applications: Part I - Terminology," Systems Group of TRW Inc., <i>Adhesives Age</i> , pp. 28-32, July 1970.
	Alman et al., "Intermetallic Sheets Synthesized from Elemental Ti, Al, and Nb Foils," Metallurgical and Materials Transactions A, Volume 26A, pp. 2759-2762, October 1995.	
		Alman et al., "Fabrication, Structure and Properties of Aluminum-Aluminide Layered Composites," <i>Materials Research Society Symp. Proc.</i> , Vol. 434, pp. 255-260, 1996.
		Alman et al., "Fabrication of NiAl Intermetallic Reactors for Microtechnology-Based Energy Chemical Systems (MECS), <i>Transactions of NAMRI/SME</i> , Volume XXIX, pp. 453-459, 2001.
Alman et al., "Processing, Structure and Properties of Aluminum-Aluminide Lay Sheet Composites," Light Weight Alloys for Aerospace Applications III, The Mi Metals & Materials Society, pp. 531-544, 1995.		
		Battezzati et al., "Solid State Reactions in Al/Ni Alternate Foils Induced by Cold Rolling and Annealing," Acta Metallurgica Inc., Acta mater., Volume 47, pp. 1901-1914, 1999.
	Benson et al., "Process Miniaturization- A Route To Total Environmental Accepts  Trans. IChemE, Vol. 71, Part A, pp. 160-168, 1993.  Bower et al., "Aligned Wafer Bonding: A Key to Three Dimensional Microstruct  Journal of Electronic Materials, Vol. 20, pp. 383-387, 1991.	
I-44, North-Holland, January 1990.		Colgan, "A Review of Thin-Film Aluminide Formation," Material Science Reports 5, pp. I-44, North-Holland, January 1990.
		Cuta et al., "Fabrication and Testing of Micro-Channel Heat Exchangers," SPIE Conf., Vol. 2640, pp. 152-160, 1995.
		d'Heurle, "Reactive Diffusion in a Prototype System: Nickel-Aluminum I: Non-Constant Diffusion Coefficient," <i>Thin Solid Films</i> , 215, pp. 19-25, 1992.
Demura et al., "Fabrication of Ni <sub>3</sub> Al Thin Foil by Cold-Rolling," <i>Intermeta</i> 157-167, 2001.		
₩		Derby et al., "Theoretical Model for Diffusion Bonding," <i>Metal Science</i> , Vol. 16, pp. 49-56, January 1982.

EXAMINER SIGNATURE:

/Nicholas D'aniello/

DATE CONSIDERED: 05/27/2008

<sup>\*</sup> Examiner: Initial if reference considered, whether or not in conformance with MPEP 609. Draw line through cite if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		Daniel Talle Challen		
Examiner's Initials*	Cite No. (optional)	OTHER DOCUMENTS		
/N.D./		Dunford et al., "Diffusion Bonding of Al-Li Alloys," Materials Science and Technology, Vol. 8, pp. 385-398, May 1992.		
	Fischer et al., "Manufacturing of Aluminum Nitride Heat Exchangers by Ceram Injection Molding," Ceramic Engineering and Science Proceedings, Volume 20 pp. 595-602, 1999.			
		Garmong et al., "Attainment of Full Interfacial Contact During Diffusion Bonding," Metallurgical Transactions A, Volume 6A, pp. 1269-1279, June 1975.		
		George et al., "Ordered Intermetallics," Annu. Rev. Mater. Sci., Volume 24, pp. 409-451 1994.		
		Glatz et al., "Diffusion Bonding of Intermetallic Ti-47Al-2Cr-0·2Si Sheet Material and Mechanical Properties of Joints at Room Temperature and Elevated Temperatures," Intermetallics 5, pp. 415-423, September 1997.		
		Haas, "Further Development of MMW and SMMW Platelet Feed Horn Arrays," Astronomical Society of the Pacific, Multi-Feed Systems for Radio Telescopes ASP Conference Series, Vol. 75, pp. 99-105, 1995.		
	Hessel et al., "High Temperature HCN Generation in an Integrated Microreaction System," Proc. IMRET3, Frankfurt, Germany, pp. 151-164, April 1999.  Hill et al., "Modelling Solid-State Diffusion Bonding," Acta metall., Vol. 37, No 2425-2437, 1989.			
		Islam et al., "Effect of Surface Finish and Sheet Thickness on Isostatic Diffusion Bonding of Superplastic Ti-6Al-4V," <i>Materials Science and Technology</i> , Volume 13, pp. 1045-1050, December 1997.		
		Islam et al., "Isostatic Diffusion Bonding of a Microduplex Stainless Steel," Scripta Materialia, Vol. 38, No. 8, pp. 1187-1193, 1998.		
		Kao et al., "A Theoretical Analysis for the Formation of Periodic Layered Structure in Ternary Diffusion Couples Involving a Displacement Type of Reactions," <i>Acta metall. mater.</i> , Vol. 41, No. 12, pp. 3463-3472, 1993.		
Koeneman et al., "Feasibility of Micro Power Supplies for MEMS," Journal of MicroElectroMechanical Systms, Vol. 6, No. 4, pp. 355-362, December 1997.				

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/N.D./		Ling et al., "Passive Alignment and Materials and Device Characterizate 4175, pp. 43-49, 2000.		
		Little, W. A., "Microminiature Refri Chips and Devices," Advances in Cr		
		Liu et al., "Ordered Intermetallic Alloys, Part I: Nickel and Iron Aluminides," JOM, pp. 38-44, May 1993.		
		Martin et al., "Microfabrication Met Systems," Chem. Eng. Comm., Vol.		ctors and Separations
		Michaelson et al., "The Early Stages of Solid-State Reactions in Ni/Al Multilayer Films J. Appl. Phys., Vol. 80, No. 12, pp. 6689-6698, December 1996.		
Moore et al., "Diffusion Brazing NiAl with Self-Generated Filler Metal," Mate Research Society, Mat. Res. Soc. Symp. Proc., Vol. 288, pp. 1173-1178, 1993.				
Nakamura et al., "Research on Pressure Welding Conditions of Various Work N (Effects of Contact Pressure, Surface Expansion Ratio and Temperature)," JSM. International Journal, Series III, Vol. 31, No. 3, pp. 612-617, 1988.				perature)," JSME
Nakao et al., "Diffusion Bonding of Intermetallic Compound TiAl," ISIJ Internativol. 31, No. 10, pp. 1260-1266, 1991.			Al," ISIJ International,	
Orhan et al., "A New Model for Diffusion Bonding and its Application to Materials Science and Engineering A271, pp. 458-468, 1999.		lication to Duplex Alloys,"		
Paransky et al., "Kinetics of Two-Phase Layer Growth During Reactive Diffusion Materials Science and Engineering A270, pp. 231-236, 1999.			Reactive Diffusion,"	
		Paul et al., "An Evaluation of Two N Proceedings of IMEC, pp. 261-266, Congress of Exposition, New Orlean	ASME International Mecha	mical Engineering
V	Peterson, "Size Limits for Regenerative Heat Engines," Microscale Thermophysical Engineering, 2:121-131, 1998.			cale Thermophysical

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	Philibert, "Reactive Diffusion in Thi Holland, pp. 74-81, 1991.	n Films," Applied Surface	Sciences, Vol. 53, North-	
			lastic Materials," Materials	
			Superplastic Super Alpha-	
			similar Metals," Journal of	
	Hydrocarbon-Fueled Power Mems,"	The Fifteenth IEEE Intern		
	Uenishi et al., "Joining of Intermetallic Compound TiAl by Using Al Filler Metal," Zeitschrift fur Metallkunde, Vol. 86, No. 4, pp. 270-274, 1995.			
	van Loo et al., "Solid State Diffusion Vol. 95, pp. 95-106, 1997.	and Reactive Phase Form	ation," Solid State Ionics,	
		Peterson, "Numerical Modeling of C Exchangers," Microscale Thermophy Philibert, "Reactive Diffusion in Thi Holland, pp. 74-81, 1991.  Pilling, "The Kinetics of Isostatic Di Science and Engineering 100, pp. 13  Pilling, "On the Modeling of Diffusion," Materials Science and Engineering 102, pp. 13  Pilling, "On the Modeling of Diffusion," Materials Science and Engineering Raviprasad et al., "Layered Structure Materials Science Letters, Vol. 15, p. Rode et al., "Self-Aligned Positionin Grooves Impressed in Metal," IEEE pp. 58-64, March 1999.  Spadaccini et al., "Development of a Hydrocarbon-Fueled Power Mems," Micro Electro Mechanical Systems, Strum et al., "Liquid-Assisted Diffusion Technologies for New Materials II, C Uenishi et al., "Joining of Intermetal Zeitschrift fur Metallkunde, Vol. 86, van Loo et al., "Solid State Diffusion Vol. 95, pp. 95-106, 1997.  Wang et al., "Ni-Al <sub>2</sub> O <sub>3</sub> and Ni-Al Co Materials and Device Characterizati	Cite No. (optional)  Peterson, "Numerical Modeling of Conduction Effects in Micre Exchangers," Microscale Thermophysical Engineering, 3:17-34  Philibert, "Reactive Diffusion in Thin Films," Applied Surface Holland, pp. 74-81, 1991.  Pilling, "The Kinetics of Isostatic Diffusion Bonding in Superp Science and Engineering 100, pp. 137-144, 1988.  Pilling, "On the Modeling of Diffusion Bonding in Materials: S 2," Materials Science and Engineering A205, pp. 72-78, 1996.  Raviprasad et al., "Layered Structures Produced by Rolling Dis Materials Science Letters, Vol. 15, pp. 511-514, 1996.  Rode et al., "Self-Aligned Positioning of Microoptical Compon Grooves Impressed in Metal," IEEE Journal of Microelectrom pp. 58-64, March 1999.  Spadaccini et al., "Development of a Catalytic Silicon Micro-CHydrocarbon-Fueled Power Mems," The Fifteenth IEEE Intern Micro Electro Mechanical Systems, pp. 228-231, 2002.  Strum et al., "Liquid-Assisted Diffusion Bonding of NiAl," Ad Technologies for New Materials II, Conference Proceedings, pp. 120-154, 1995.  Van Loo et al., "Solid State Diffusion and Reactive Phase Form	

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